

In re SCHEID ET AL., Application No. 10/625,012
Amendment A

Amendments to the Claims:

The listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claim 1 (currently amended): A method for use with a content addressable memory, the method comprising:

identifying a first value;
performing a hashing function on the first value to generate a hashed first value;
performing a lookup operation in the content addressable memory based on with a lookup value including the hashed first value to generate a first content addressable memory result, the first content addressable memory result includes an address; and
~~performing an operation based on the first content addressable memory result~~
retrieving a record from an adjunct memory at a position corresponding to the address, the record including a key value and a statistics value, comparing the key value to the first value; and in response to the key value matching the first value, updating the statistics value.

Claim 2 (canceled)

Claim 3 (original): The method of claim 1, wherein said identifying the first value includes masking an original value with a mask value to generate the first value.

Claim 4 (original): The method of claim 1, wherein the first value includes a masked value.

Claim 5 (original): The method of claim 1, wherein the first value includes a masked flow identification value.

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Claim 6 (currently amended): A apparatus for use with a content addressable memory,
the apparatus comprising:

means for identifying a first value;

means for performing a hashing function on the first value to generate a hashed first
value;

means for performing a lookup operation in the content addressable memory based on
a lookup value including the hashed first value to generate a first content addressable memory
result, the first content addressable memory result including an address; and

~~means for performing an operation based on the first content addressable memory~~
~~result~~

means for retrieving a record from an adjunct memory at a position corresponding to
the address, the record including a key value and a statistics value; and

means for updating the statistics value in response to a comparison operation
determining that the key value matches the first value.

Claim 7 (canceled)

Claim 8 (original): The apparatus of claim 6, wherein said means for identifying the
first value includes means for masking an original value with a mask value to generate the
first value.

Claim 9 (original): The apparatus of claim 6, wherein the first value includes a masked
value.

Claim 10 (original): The apparatus of claim 6, wherein the first value includes a
masked flow identification value.

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Claim 11 (currently amended): An apparatus comprising:

a hashing function configured to hash a first value to generate a hashed first value;
a content addressable memory configured to perform a lookup operation based on a lookup value including the hashed first value to generate a first content addressable memory result;
an adjunct memory configured to perform a memory read operation ~~based on~~ at a location identified by the first content addressable memory result to generate a memory record, the memory record including a key value and a second value; and
control logic configured to compare the key value to the first value with the key value and to perform an operation based on the second value in response to determining that the key value matches the first value.

Claim 12 (original): The apparatus of claim 11, comprising masking logic configured to mask an original value to generate the first value.

Claim 13 (original): The apparatus of claim 11, comprising masking logic configured to mask a flow identification value to generate the first value.

Claim 14 (original): The apparatus of claim 11, wherein the second value corresponds to a statistics value; and said control logic is configured to update the second value.

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Claim 15 (currently amended): A method for processing packets, the method comprising:

- identifying a packet;
- identifying a flow identification value based on the packet;
- performing a lookup based on a lookup value including the flow identification value to identify a flow identification value mask;
- masking the flow identification value with the flow identification value mask to generate a masked flow identification value;
- hashing the masked flow identification value to generate a hashed masked flow identification value;
- performing an content addressable memory lookup operation on a set of content addressable memory entries based on a lookup value including hashed masked flow identification value to identify an address location; and
- performing an operation based on the address location.

Claim 16 (original): The method of claim 15, wherein said performing the operation includes updating a value stored a location corresponding to the address location.

Claim 17 (original): The method of claim 15, wherein said performing the operation includes retrieving a value stored a location corresponding to the address location.

Claim 18 (currently amended): The method of claim 15, wherein said performing a lookup based on the flow identification value to identify a flow identification value mask includes performing the lookup on a set of values ~~correspond~~ corresponding to access control list entries.

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Claim 19 (original): An apparatus for processing packets, the apparatus comprising:

- a packet processing engine configured to identify a packet and a flow identification value based on the packet;
- an content addressable memory configured to perform a first lookup operation based on the flow identification value to identifying a matching location;
- an adjunct memory configured to perform a second lookup operation based on the matching location to identify a flow identification value mask;
- masking logic configured to mask the flow identification value with the flow identification value mask to generate a masked flow identification value;
- a hashing function configured to hash the masked flow identification value to generate a hashed masked flow identification value ;
- a second content addressable memory configured to perform a third lookup operation based on the masked flow identification value to identify a third lookup result;
- a value memory for storing values; and
- a control configured to update a value at a position corresponding to the third lookup result in the value memory.

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Claim 20 (original): A computer-readable medium containing computer-executable instructions for performing steps for processing packets, said steps comprising:

- identifying a packet;
- identifying a flow identification value based on the packet;
- performing a lookup based on the flow identification value to identify a flow identification value mask;
- masking the flow identification value with the flow identification value mask to generate a masked flow identification value;
- hashing the masked flow identification value to generate a hashed masked flow identification value;
- performing an content addressable memory lookup operation on a set of content addressable memory entries to identify an address location; and
- performing an operation based on the address location.

Claim 21 (original): The computer-readable medium of claim 20, wherein said performing the operation includes updating a value stored a location corresponding to the address location.

Claim 22 (original): The computer-readable medium of claim 20, wherein said performing the operation includes retrieving a value stored a location corresponding to the address location.

Claim 23 (original): The computer-readable medium of claim 20, wherein said performing a lookup based on the flow identification value to identify a flow identification value mask includes performing the lookup on a set of values correspond to access control list entries.

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Claim 24 (original): An apparatus for processing packets, the apparatus comprising:
means for identifying a packet;
means for identifying a flow identification value based on the packet;
means for performing a lookup based on the flow identification value to identify a
flow identification value mask;
means for masking the flow identification value with the flow identification value
mask to generate a masked flow identification value;
means for hashing the masked flow identification value identification value to generate
a hashed masked flow identification value identification value;
means for performing an content addressable memory lookup operation on a set of
content addressable memory entries to identify an address location; and
performing an operation based on the address location.

Claim 25 (original): The apparatus of claim 24, wherein said means for performing the
operation includes means for updating a value stored a location corresponding to the address
location.

Claim 26 (original): The apparatus of claim 24, wherein said means for performing the
operation includes means for retrieving a value stored a location corresponding to the address
location.

Claim 27 (original): The apparatus of claim 24, wherein said means for performing a
lookup based on the flow identification value to identify a flow identification value mask
includes means for performing the lookup on a set of values correspond to access control list
entries.